

AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions, and listings, of claims in the application:

LISTING OF THE CLAIMS

1. (currently amended) A non-contact power supply system utilizing synchronized command signals to control and correct phase differences amongst power supply units, the system comprising:

a moving body;

a plurality of induction lines arranged sequentially along a moving path of the moving body and adjusted to an equal impedance at a predetermined frequency; and

a plurality of power supply units respectively transforming direct current to alternating current of the predetermined frequency by means of a plurality of switching devices each driven by a rectangular wave signal, and feeding the transformed current as output current to the induction lines,

the moving body including a pickup coil facing the induction lines, the moving body having a load varying in power consumption, the load being fed with power from electromotive force induced to the pickup coil, wherein

~~the power supply units each has a command signal of the predetermined frequency to drive the switching devices,~~

the power supply units each includes a measuring unit for measuring power consumption and output current fed to the induction lines and a calculation unit for determining a phase difference between the output current fed to the induction lines and the rectangular wave signal based on the output current and power consumption measured by the measuring unit, [[and]]

a specific one of the power supply units and the other power supply units are connected in series via signal transmission lines,

the specific power supply unit has a command signal of the predetermined frequency to drive the switching devices, ~~the power supply units each~~ advances or delays the rectangular wave signal in response to the command signal according to the phase

difference determined by the calculation unit, thereby to drive the switching devices, and transmits, to the downstream power supply unit, the command signal as a signal for compensating for a phase delay between the specific power supply unit and the power supply unit connected downstream, the phase delay being caused by a length of the signal transmission line, and

each of the other power supply units advances or delays the rectangular wave signal in response to the command signal having been received from the power supply unit connected upstream according to the phase difference determined by the calculation unit, thereby to drive the switching devices, and transmits, to the downstream power supply unit, the received command signal as a signal for compensating for a phase delay between the power supply unit and the power supply unit connected downstream, the phase delay being caused by a length of the signal transmission line.

Claim 2 (canceled)

3. (currently amended) The non-contact power supply system according to claim 1, wherein

the specific power supply unit includes a reference pulse generator circuit for outputting a synchronization signal as the command signal;

a phase adjustment circuit for compensating for a delay of the synchronization signal outputted from the reference pulse generator circuit and transmitting the signal to the power supply unit connected downstream, the delay being caused by a line length of the signal transmission line between the specific power supply and the power supply unit connected downstream; and

a phase difference detection circuit for detecting a phase difference between the synchronization signal transmitted from the phase adjustment circuit and a return synchronization signal fed back from the downstream power supply unit to which the synchronization signal has been transmitted,

the phase adjustment circuit corrects a phase of the synchronization signal, which has been outputted from the reference pulse generator circuit, according to the phase difference

detected by the phase difference detection circuit, and transmits the signal to the downstream power supply unit,

each of the other power supply units uses a synchronization signal having been received from the upstream power supply unit as the command signal,

each of the other power supply units includes a phase adjustment circuit for compensating for a delay of the synchronization signal having been received from the upstream power supply unit and transmitting the signal to the power supply unit connected downstream, the delay being caused by a line length of the signal transmission line between the power supply unit and the power supply unit connected downstream; and

a phase difference detection circuit for detecting a phase difference between the synchronization signal transmitted from the phase adjustment circuit and a return synchronization signal fed back from the downstream power supply unit to which the synchronization signal has been transmitted, and

each of the phase adjustment circuits of the other power supply units corrects a phase of the synchronization signal having been received from the upstream power supply unit according to the phase difference detected by the phase difference detection circuit, and transmits the signal to the downstream power supply unit

~~a specific one of the power supply units and the other power supply units are connected in series via signal transmission lines;~~

~~the specific power supply unit transmits, to the downstream power supply unit, the command signal as a signal for compensating for a phase delay between the specific power supply unit and the power supply unit connected downstream, the phase delay being caused by a length of the signal transmission line;~~

~~each of the other power supply units outputs the rectangular wave signal for correcting and driving the switching devices based on the command signal having been received from the power supply unit connected upstream, and transmits, to the downstream power supply unit, the received command signal as a signal for compensating for a phase delay between the power supply unit and the power supply unit connected downstream, the phase delay being caused by a length of the signal transmission line.~~

4. (currently amended) The non-contact power supply system according to claim 3~~claim—2~~, wherein each of the other power supply units ~~includes~~forms a backup ~~synchronization~~command signal generator circuit for forming a backup synchronization signal~~matching phases of a same phase with reference to the received synchronization~~command signal ~~and frequency~~, and when the command signal is not inputted from~~from~~ the upstream power supply unit, advances or delays the rectangular wave signal in response to the backup synchronization signal as the command signal and drives the switching devices.

Claim 5 (canceled)

6. (original) The non-contact power supply system according to claim 1, wherein a capacitor and a variable inductor are connected in series with the induction lines, and
the induction lines, capacitor, and variable inductor connected in series have an impedance of the predetermined frequency set as a capacitive reactance.

7. (currently amended) A non-contact power supply system utilizing synchronized command signals to control and correct phase differences amongst power supply units in which a plurality of induction lines adjusted to the same impedance at a predetermined frequency are sequentially placed along a moving path of a moving body, the system comprising power supply units each transforming direct current to alternating current of the predetermined frequency by means of a plurality of switching devices driven by a rectangular wave signal and feeding the current as output current to the induction lines, the moving body including a pickup coil facing the induction lines, the moving body having a load of varying power consumption, the load being fed with power from electromotive force induced to the pickup coil,

wherein each of the power supply units~~[[unit]]~~ has a command signal of the predetermined frequency to drive the switching devices,

the power supply unit includes:

a measuring unit for measuring power consumption of the induction lines having been fed with the output current, and

a storage unit for storing beforehand a phase difference between the rectangular signal and the output current fed to the induction lines at each power consumption of the induction lines, and

the power supply unit searches the storage unit according to the power consumption measured by the measuring unit to determine a phase difference between the output current and the rectangular signal, advances or delays the rectangular wave signal in response to the command signal according to the determined phase difference, and drives the switching devices.

Claim 8 (canceled)